

What is claimed is:

1. A composition consisting essentially of trans 1,2-dichloroethylene and an effective stabilizing amount of each of:
 - a. alkylene oxide having from 3 to 12 carbon atoms and a vicinal epoxy group,
 - b. alcohol chosen from aliphatic and cycloaliphatic alcohols having from 2 to 8 carbon atoms, and
 - c. material chosen from (i) lower alkoxyphenol, (ii) free radical stabilizer having at least one 2,2,6,6-tetra(lower alkyl)-1-piperidinyloxy-yl free radical group or 2,2,5,5-tetra(lower alkyl) pyrrolidinyloxy group, or (iii) mixtures of (i) and (ii).
2. A composition according to claim 1 wherein the alkylene oxide has from 3 to 4 carbon atoms.
3. A composition according to claim 2 wherein the alkylene oxide is butylene oxide.
4. A composition according to claim 1 wherein the alcohol is an aliphatic alcohol having from 3 to 4 carbon atoms.
5. A composition according to claim 4 wherein the aliphatic alcohol is isopropanol.
6. A composition according to claim 1 wherein the lower alkoxy phenol is a 4-alkoxyphenol.
7. A composition according to claim 6 wherein the 4-alkoxyphenol is 4-methoxyphenol.

8. A composition according to claim 1 wherein the free radical stabilizer group is a material having a 2,2,6,6-tetramethyl-1-piperidinyloxy-yl group.

9. A composition according to claim 1 wherein the stable free radical stabilizer is a material having a 2,2,6,6-tetra(lower alkyl)-1-piperidinyloxy-4-yl free radical group.

10. A composition according to claim 9 wherein the stable free radical stabilizer is a material having the free radical group: 2,2,6,6-tetramethyl-4-hydroxy-1-piperidinyloxy, 2,2,6,6-tetramethyl-4-amino-piperidinyloxy, 2,2,6,6-tetramethyl-4-dimethylamino-piperidinyloxy, 2,2,6,6-tetramethyl-4-ethanoyloxy piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo-1-piperidinyloxy or 2,2,6,6-tetramethyl-4-[(methylsulfonyl)oxy]-1-piperidinyloxy.

11. A composition according to claim 9 wherein the stable free radical stabilizer is a material having the 2,2,6,6-tetramethyl-1-piperidinyloxy-4-yl benzoate free radical group.

12. A composition according to claim 9 wherein the stable free radical stabilizer is a bis(2,2,6,6-tetramethyl-1-piperidinyloxy-4-yl) ester of a saturated dicarboxylic acid.

13. A composition according to claim 12 wherein the saturated dicarboxylic acid contains from 2 to 13 carbon atoms.

14. A composition according to claim 13 wherein the stable free radical stabilizer is bis(2,2,6,6-tetramethyl-1-piperidinyloxy-4-yl) sebacate.

15. A composition according to claim 1 wherein the free radical stabilizer material is a material having the 2,2,5,5-tetra(lower alkyl) pyrrolidinyloxy group.

16. A composition according to claim 15 wherein the 2,2,5,5-tetra(lower alkyl) pyrrolidinyloxy group is 2,2,5,5-tetramethyl pyrrolidinyloxy.

17. A composition according to claim 15 wherein the free radical stabilizer is a material having a 2,2,5,5-tetramethyl-3-amino-pyrrolidinyloxy, 2,2,5,5-tetramethyl-1-oxa-3-azacyclopentyl-3-oxy, or 2,2,5,5-tetramethyl-3-pyrrolinyl-1-oxy-3-carboxylic acid group.

18. A composition consisting essentially of trans 1,2-dichloroethylene and an effective stabilizing amount of each of:

- a. butylene oxide,
- b. isopropyl alcohol, and
- c. a free radical stabilizer material having at least one 2,2,6,6-tetra(lower alkyl)-1-piperidinyloxy-yl free radical group.

19. The composition of claim 18 further containing an effective stabilizing amount of 4-methoxyphenol.

20. A composition consisting essentially of trans 1,2-dichloroethylene and an effective stabilizing amount of each of:

- a. butylene oxide,
- b. isopropyl alcohol, and
- c. 4-methoxyphenol.

21. A liquid halohydrocarbon vapor degreasing solvent composition comprising 1,2-dichloroethylene as the primary degreasing solvent and an effective stabilizing amount of each of:

- a. alkylene oxide having from 3 to 12 carbon atoms and a vicinal epoxy group,
- b. alcohol chosen from aliphatic and cycloaliphatic alcohols having from 2 to 8 carbon atoms, and

c. material chosen from (i) lower alkoxyphenol, (ii) free radical stabilizer having at least one 2,2,6,6-tetra(lower alkyl)-1-piperidinyloxy-yl free radical group or 2,2,5,5-tetra(lower alkyl) pyrrolidinyloxy group, or (iii) mixtures of (i) and (ii).

22. The liquid composition of claim 21 wherein the 1,2-dichloroethylene is principally trans-1,2-dichloroethylene.

23. The liquid composition of claim 22 wherein the alkylene oxide is butylene oxide, the alcohol is isopropanol, the lower alkoxyphenol is 4-methoxyphenol, and the free-radical stabilizer is 2,2,6,6-tetramethyl-4-hydroxy-1-piperidinyloxy.

24. A process for vapor degreasing an article, which comprises contacting the article with vapors from a stabilized halohydrocarbon solvent composition consisting essentially of trans-1,2-dichloroethylene containing stabilizing amounts of each of:

- a. alkylene oxide having from 3 to 12 carbon atoms and a vicinal epoxy group,
- b. alcohol chosen from aliphatic and cycloaliphatic alcohols having from 2 to 8 carbon atoms, and
- c. material chosen from (i) lower alkoxyphenol, (ii) free radical stabilizer having at least one 2,2,6,6-tetra(lower alkyl)-1-piperidinyloxy-yl free radical group or 2,2,5,5-tetra(lower alkyl) pyrrolidinyloxy group, or (iii) mixtures of (i) and (ii).

25. The process of claim 24 wherein the article contains contaminating amounts of metal chosen from iron, aluminum, copper and zinc.

26. The process of claim 24 wherein the article is a printed circuit board.

27. The process of claim 24 wherein the alkylene oxide is butylene oxide, the alcohol is isopropanol, the lower alkoxyphenol is 4-methoxyphenol, and the free-radical stabilizer is 2,2,6,6-tetramethyl-4-hydroxy-1-piperidinyloxy.

28. A process for vapor degreasing an article, which comprises contacting the article with vapors from a stabilized halohydrocarbon solvent composition comprising trans-1,2-dichloroethylene as the primary degreasing solvent and effective stabilizing amounts of each of:

- a. alkylene oxide having from 3 to 12 carbon atoms and a vicinal epoxy group,
- b. alcohol chosen from aliphatic and cycloaliphatic alcohols having from 2 to 8 carbon atoms, and
- c. material chosen from (i) lower alkoxyphenol, (ii) free radical stabilizer having at least one 2,2,6,6-tetra(lower alkyl)-1-piperidinyloxy-yl free radical group or 2,2,5,5-tetra(lower alkyl) pyrrolidinyloxy group, or (iii) mixtures of (i) and (ii).

29. The process of claim 28 wherein the alkylene oxide is butylene oxide, the alcohol is isopropanol, the lower alkoxyphenol is 4-methoxyphenol, and the free-radical stabilizer is 2,2,6,6-tetramethyl-4-hydroxy-1-piperidinyloxy.